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*Stated Meeting, June 17, 1870.*

Present 10 members.

Mr. FRALEY, Vice President, in the Chair.

Photographs for the Album were received from Prof. H. A. Newton, of Yale, and Dr. Jarvis of Dorchester.

A letter announcing the decease of Madame Michaux was read, and on motion, the following resolution was adopted without debate.

*Resolved*, That M. Carlier be requested to have prepared the proper procuration or Letter of Attorney from this Society to himself, to dispose of the rentes or public loans standing in the name of this Society, being the investment of the Michaux legacy, and to make deposit of the proceeds as the Society may hereafter direct; and also to instruct us as to the manner of executing the procuration.

A letter withdrawing his resignation was received from the President, Dr. Wood.

Donations for the Library were received from the Museum at Beunos Ayres; the Carlo Alberto Observatory; Berlin Academy; London Society of Antiquaries; Essex Institute; B. N. H. S. Edmund Quincy, of Dedham; the Albany State Library; N. Y. Lyceum; Phil. Acad. of N. Sciences; Franklin Institute; Medical News; Mr. Hector Orr; Dr. Brinton; the U. S. War Department, and the Editors of Nature.

Prof. Joseph Henry returned, by request of the late Mrs. Bache, the MSS. correspondence of Prof. A. D. Bache relating to the Society.

Dr. Brinton returned to the custody of the Society Dr. Byington's MSS. Choctaw Grammar.

Prof. Frazer offered for publication in the Transactions a chart exhibiting all the metallurgical processes now employed at Friberg, in Germany, with descriptive text by Persifer Frazer, Jun., which was referred to a Committee consisting of Dr. Genth, Prof. Lesley and Dr. Bridges.

Prof. Cope communicated for publication in the Proceedings a paper entitled: A partial synopsis of the Ichthyology of North Carolina, (see next number of Proceedings) which was referred to the Secretaries.

Dr. Genth made some remarks upon a new meteorite from North Carolina, which he desired to be considered preliminary to a description and full analysis of the same. Prof. Kerr had forwarded photographs of the mass.

Dr. Genth showed also, specimens of metallic lead and metallic iron from Gold tailings on Camp Creek, Montana Territory. The place, circumstances, absence of all meteoric indications, and presence of gold in the lead, support the view that we have here a genuine discovery of lead and iron in a state of nature.

Dr. Genth showed photographs of a new meteoric iron, weighing about twenty pounds, which was found on a small mount in Rockingham Co., N. C.; he made some preliminary remarks on a fragment of the same, which he received from Prof. W. C. Kerr, State Geologist of N. C. The iron is coated with a crust of hydrated sesquioxide of iron. A polished portion of it, after etching with dilute nitric acid, developed the Widmannstaedtean figures, and showed a very remarkable structure of the iron. It is composed of three different kinds of iron; one portion of it is quite homogeneous, and has a very fine granular structure; if, however, the light is reflected in different directions it shows a peculiar glistening, and, very faintly, lines intersecting at angles of about  $60^\circ$  and  $120^\circ$ ; this same iron runs into bands of not over  $0.5^{\text{mm}}$  diameter, which, at another portion of the iron, intersect at angles of about  $60^\circ$ . The space between the bands is filled with an iron presenting a reticulated structure. Disseminated throughout the homogeneous iron are crystals of *rhabdite*, but few only show a regular arrangement. A preliminary analysis gave:

Iron.....	90.41	per cent.	
Nickel (Cobalt).....	8.74	"	
Copper.....	0.11	"	
Iron.....	0.27	"	} Phosphide insoluble in chlorhydric acid.
Nickel (Cobalt).....	0.33	"	
Phosphorus.....	0.14	"	

traces of a quartz-like mineral.

A sulphide of iron of a pale, brass yellow color, and great hardness—probably *pyrite* is mixed with the iron. Dr. Genth intends to give a fuller account of this interesting meteorite at a future day.

Dr. Genth also showed specimens of *native iron* and *native lead* from the bed-rock of gold-placers, and covered with about six feet of gravel, at Camp Creek, Montana Territory, which have been discovered there by Mr. P. Knabe, who kindly communicated them.

The native iron is found in small, angular fragments, but slightly coated with rust; the largest which he has seen is about 0.5 inch in length. Etching with dilute nitric acid does not develop any Widmannstaedtean figures, but a finely granular structure. Mr. Knabe examined

it for nickel and cobalt with negative results. Associated with the iron is native lead, in irregularly shaped rounded and flattened pieces, from the size of a pin's head to about 0.5 inch in diameter. The lead is coated with a crystalline crust of *massicot*, of a sulphur yellow to reddish yellow color; some pieces also show very brilliant but microscopic crystals, which may be *cerussite*. Acetic acid dissolves this *massicot*, and leaves the metallic lead, which then shows its crystalline structure. A small piece, on dissolving it in nitric acid, left an appreciable quantity of *gold*, but the solution contained no *silver*.

Prof. Cope made some observations on the Reptilia of the Triassic formations of the Atlantic region of the United States. He observed that thirteen species had been described and referred to ten genera. None of these had been referred by their describers to their appropriate orders, and he had undertaken an investigation of them, having for its object such reference, as well as the determination of the closer affinities.

Three of the species he proved to be Dinosauria. He had already assigned *Megadactylus* and *Bathygnathus* to this division, and would now add *Clepsysaurus*, Lea, from evidence derived from an ischium discovered among the original remains. It resembled that of *Megadactylus*.

Of the remaining ten species, he was satisfied that those referred to *Palæosaurus* by Emmons, as well as the *Composaurus* and *Eurydorus*, were founded on posterior teeth of *Belodonts*. He also said that nothing was to be found in the descriptions of *Rhytidodon*, Emmons, and *Omosaurus*, Leidy, to distinguish them from *Belodon*, to which genus he was inclined to refer the remains which had fallen under his observation. Thus, three species were certainly to be distinguished from the ten, viz: *Belodon carolinensis*, Emm., (*Rhytidodon*, Emm., ? *Centemodon sulcatus*, Lea); *Belodon priscus*, Leidy, (*Palæosaurus carolinensis*, Emm., ? *Composaurus priscus*, Leidy, *Clepsysaurus pennsylvanicus* in part, Emmons); *Belodon leaii*, Emmons, (*Clepsysaurus*, Lea). The above were not asserted to belong to the same genus without doubt, but that evidence to distinguish them was yet wanting. He added a fourth species, discovered by Chas. M. Wheatley, in the Triassic tracks of Phoenixville, Pennsylvania, which was apparently distinct from the above, and of larger size. The remains preserved were dorsal, lumbar and caudal vertebræ, with costal and abdominal ribs; left femur and fibula nearly perfect; portion of pelvis; ungueal and chevron bones, etc. The femur measured thirteen inches in length, and the lumbar vertebræ exhibited slender cylindric diapophyses, which bore ribs to the sacrum. This reptile was named *Belodon lepturus*, and was estimated to have attained a length of about twelve feet.

Eleven of the thirteen species being thus disposed of, there remained

the *Dicynodon rosmarus*, Cope, and *Rhabdopelix longispinis*, Cope. The latter he had formerly suspected to be a Pterosaurian, but he thought it more likely that it would turn out to be a Rhynchocephalian reptile.

He called attention to four remarkable vertebræ from the Cretaceous green sand of New Jersey, which were characterized by the possession of enormous pneumatic foramina. The articular extremities of the extremities were rugose, and with scarcely any dense layer, so that they probably belonged to an immature animal, and were to be referred to the sacral or lumbar regions. If they belonged to the latter, they indicated a coössification similar to that seen in many birds. That they were not dorsals is indicated by the lack of capitular articulations. The pneumatic foramina occupied half of the centrum along its middle, leaving abutments fore and aft, for the support of the neural arch, which was lost in each one. There were no diapophyses. The neural canal presented a deepening and compression at the middle of the centrum, and a rising and expansion near the articulations. Centra much compressed medially, as well as contracted upwards; articular extremity subtriangular, with rounded angles and notch for neural canal one-third its vertical diameter. Cancellous tissue, coarse, but much finer than in *Laelaps*; the dense layer thin. The total length of the four, is seventeen and a half inches, the shortest measuring four; the other three, four and a half inches in length. The complete number of six would have measured six inches in length.

These vertebræ had been described as the sacrals of a young *Hadrosaurus* by Leidy (Cretaceous Reptiles, U. S., p. 100), but there are several reasons for dissenting from this conclusion. The pneumatic foramina of the sacral nerves, which, however, in known Reptiles and Birds, issue *between* the neural arches, not beneath them, not only in the sacral, but in the lumbar and other vertebræ. The reasons for questioning their pertinence to *Hadrosaurus* were, first: the genus *Megadactylus* presents similar large pneumatic foramina, and they occur in both the caudal and lumbar vertebræ; the lumbar and caudal vertebræ of two species of *Hadrosaurus* are known, and do not present any pneumatic foramina whatever, which would scarcely be the case were the present vertebræ sacrals of *Hadrosaurus*. Second: they form too long a series for the known ilium of *Hadrosaurus*. From the approximation of the facets for the sacral diapophyses in the type specimens of *H. foulkei*, it would appear that those vertebræ had somewhat the shortened form of the caudals. Yet the present animal appears to be a young one. Third: the structure is in several respects more Megalosaurian than Iguanodontine. Thus the alternate enlargement and contraction of the neural canal is seen in *Palæosaurus* and *Clepsysaurus*; the neural arches appear to have alternated above the articulations of the centra. The pneumatic foramina exist in *Laelaps*, but of reduced dimensions.

In respect to the presence of the foramina just mentioned, there is a resemblance to the *Ornithopsis hulkei*, recently discovered by Seeley, though here the comparison ends. In that form the cancellous texture of the centrum is extremely open and light, and composed "of enormous

honeycomb-like cells of irregular polygonal form—for the most part long in the direction of the length of the centrum, and divided by exceedingly thin and compact films of bone," etc. The structure in the subject of the above description is spongy and light, but much closer. *Lælaps* offers a much closer resemblance to *Ornithopsis* in its exceedingly coarse structure; while in *Megadactylus*, lumbar vertebræ appear to be absolutely hollow.

Had Dr. Seeley been acquainted with these genera, he would probably have referred *Ornithopsis* to the Goniopod Dinosauria, rather than to the Ornithosauria. Prof. Cope added that he had already (Aug. 1869,) published the view that the bone described previously as a quadratum of *Iguanodon*, (the type of Seeley's *Ornithopsis*), was evidently not a cranial bone, and that he had always supposed it to be a vertebra.

The reptile represented by the above vertebræ was named *Pneumatoarthrus peloreus*; the possibility of its being found to be *Ornithotarsus* being entertained, though the near resemblance of the bones to those of a tortoise could not be overlooked. The specimens were discovered by Dr. John H. Slack, in Monmouth Co., N. J.

Prof. Cope exhibited also seven Australian skulls and one Maori skull, probably the first seen here.

Pending nominations, Nos. 651 to 659 were read.

And the Society was adjourned.

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*Stated Meeting, July 15, 1870.*

Present, four members.

DR. GENTH in the Chair.

Letters of envoi were received from various correspondents.

Letters of acknowledgement for the receipt of No. 83 were received from the Essex and Smithsonian Institutes, Massachusetts, New York, New Jersey, and Georgia Historical Societies, Cambridge Museum, and New York Lyceum; Nos. 77 to 80, R. Danish Society; 77 and XIII. 2, Zool. Bot. Soc., Vienna; 78—80, Physical Society, Berlin; 76—80, Nassau, N. H. Association.

Donations for the Library were received from the Academies at St. Petersburg, Berlin, and San Francisco; the Insti-